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**AN UNUSUAL PINNOTHERID ZOEAE ATTRIBUTED TO
AFROPINNOTHERES MONODI MANNING, 1993 (DECAPODA:
BRACHYURA: PINNOTHERIDAE) FROM THE SELVAGENS
ISLANDS (EASTERN ATLANTIC OCEAN)**

By JOHN ALISTAIR LINDLEY ¹, FÁTIMA HERNÁNDEZ ²,
ESTHER TEJERA ² & SEBASTIÁN JIMÉNEZ ²

With 1 figure

ABSTRACT. A pinnotherid zoea taken in a plankton sample from the Selvagens Islands during the TFMCBM/SELVAGENS'2000 Cruise, organized by the Natural Sciences Museum of Tenerife (Canary Islands), differs from previously described zoeas of the family. The specimen has dorsal and lateral spines but no rostrum, a combination of characters not previously described from pinnotherid zoeas. The lateral spines originate behind the upper part of the eye, unlike all previously described Pinnotheridae zoeas where these spines, when present, originate near the ventro-lateral margin of the carapace. The specimen is attributed to *Afropinnotheres monodi*, the only pinnotherid species known from the area with undescribed larvae.

KEY WORDS: Selvagens Islands, plankton, Decapoda, pinnotheridae, zoea.

¹ Sir Alister Hardy Foundation for Ocean Science, The Laboratory, Citadel Hill, Plymouth, PL1 3DH, U. K.

² Departamento de Biología Marina, Museo de Ciencias Naturales (O. A. M.), Apartado de Correos 853, 38003 Santa Cruz de Tenerife, Islas Canarias, España. E-mail: fatima@museoscabtf.rcanaria.es

RESUMEN. Una larva zoea de la familia Pinnotheridae, recolectada en una muestra de plancton en las Islas Salvajes (campaña TFMCBM/SALVAJES'2000, Museo de Ciencias Naturales de Tenerife), ha diferido de otras previamente descritas para esta familia. El espécimen presenta espinas laterales y dorsal aunque no rostro, combinación de caracteres no conocidos, hasta el momento, para las zoeas características de la familia. Las espinas laterales se originan en la parte posterior de la zona superior del ojo, mientras que en el resto de las zoeas descritas en Pinnotheridae estas espinas, cuando están presentes, se hallan cerca del margen ventral-lateral del caparazón. El espécimen ha sido atribuido a *Afropinnotheres monodi*, la única especie conocida para el área y cuyas fases larvarias aún no han sido descritas.

PALABRAS CLAVE: Islas Salvajes, plancton, Decápodos, zoea de Pinnotheridae.

INTRODUCTION

Pinnotheridae known from the north-west African coast are *Afropinnotheres monodi* Manning, 1993 and *Nepinnotheres pinnotheres* (Linnaeus, 1758) (MANNING 1993, UDEKEM d'ACÓZ, 1999). *Asthenognathus atlanticus* Monod, 1933 (Pinnotheroidea, Asthenognathidae) occurs on the same coasts. *N. pinnotheres* also occurs in the Canary Islands (GONZÁLEZ PÉREZ, 1995, UDEKEM d'ACÓZ, 1999).

Decapods from plankton samples taken, as part of the *Macaronesia* 2000 programme, in the Selvagens Islands, a small archipelago situated between the Canary Islands and Madeira, have been examined. A first stage zoea with the characteristics that indicated that it was a member of the Pinnotheridae but showing some unusual characteristics was found in a sample with code number TFMCBM25COON.

MATERIAL AND METHODS

The plankton sample was taken on September, 25 with a triple net WP-2 (200 µm) during a nocturnal (23.00 h) open plankton haul from 1000 m to surface in the station position 15° 52' 07''W and 30° 05' 27''N over a bottom of 1450 m. The specimen is described as far as practicable without dissection and is retained in the collection of the Museum with the database reference number TFMCBMZP/000913-TFMCBMDL/000396.

Others Decapods also found in samples from the Selvaje Islands during this cruise include *Sergestes armatus* Krøyer, 1855; *Sergestes atlanticus* H. Milne-Edwards, 1830; *Sergestes cornutus* Krøyer, 1855; *Sergestes pectinatus* Sund, 1920; *Sergia arachnipodus* Cocco, 1832; *Sergia tenuiremis* (Krøyer, 1855); *Petalidium obesum* (Krøyer, 1859); *Eretmocarid* sp., and specimens of Pandalidae, Processidae, Callianassidae (cf. LINDLEY & HERNANDEZ, 1999), *Calcinus tubularis* (Linnaeus, 1767), Coenobitoidea, Dorippidae, Polybiinae and Parthenopidae.

RESULTS: DESCRIPTION OF THE ZOEAE

The specimen, total length 1.66 mm, carapace length 0.71 mm, is drawn in lateral view in Fig. 1a. Dorsal and lateral carapace spines are present, but there is no rostrum. The lateral spines are situated just behind upper part of eye, not near the lower margin. The length of the dorsal spine is 0.38 mm. Antennules have 3 aesthetascs, one longer and more robust than the others. The antennae consist of a well-developed protopodite without a proximal seta, referable to type 1² of MARQUES & POHLE (1995). Both pairs of maxillipeds have 4 terminal setae on exopodites; the endopodites of the first maxillipeds have 5 segments with 5, 2, 1, 2 and 2 setae while those of the second maxillipeds have 3 segments, as in type 2^o of MARQUES & POHLE (1995) with 5, 1 and 1 setae.

The abdomen consists of 5 segments. There are dorso-lateral processes on segments 2 and 3 and short blunt postero-lateral processes on segments 4 and 5 which are slightly expanded, width approximately 1.5 times depth similar to type 5¹ of MARQUES & POHLE (1995).

The telson, of type 6³ of MARQUES & POHLE (1995), has a well developed fork with a median lobe. The furcal shafts have a single dorso-lateral spine. (Fig. 1b.).

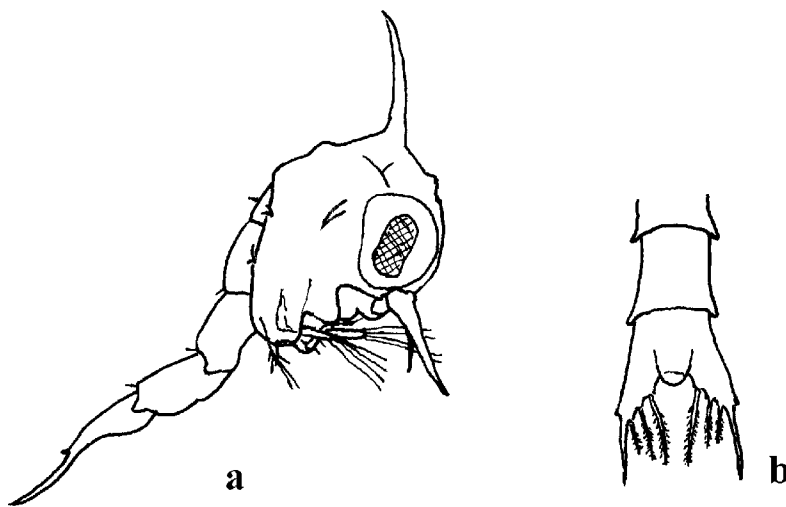


Fig. 1 - Zoea I attributed to *Afropinnotheres monodi*: a. Lateral view; b. The 5th abdominal segment and telson. Escalé: 1 cm: 0.2 mm.

DISCUSSION

The trilobed telson, the form of the antennule for the setal formula of the endopodites of the maxillipeds are consistent with descriptions of some other Pinnotheridae (MARQUES & POHLE, 1995). However the carapace spines are very distinctive. MARQUES

& POHLE (1995), list types with dorsal, rostral and lateral carapace spines, rostral and lateral only and rostral only, but state that pinnotherids with dorsal and lateral spines but no rostrum, as in the present specimen, are unknown. The lateral spines, when present, in known Pinnotheridae originate from close to the ventro-lateral carapace margin (RICE, 1980) but those of the present specimen originate quite high on the carapace, not far behind the eye.

The zoeal stages of *Nepinnotheres pinnotheres* have been described by ATKINS (1955) and INGLE (1992) and have dorsal, rostral and carapace lateral spines, however, the dorsal and laterals are proportionally longer than those of the present specimen. The antenna is rudimentary. The telson has a central lobe that is more acute distally than the present specimen, and the furcae may have an outer lateral and lateral spine, although PAULA (1987) did not find the lateral spine in specimens from southwest Portugal.

The zoeas of *Asthenognathus atlanticus*, described by BOCQUET (1965) also differ markedly from the present specimen. There is a long dorsal spine (about 1.5 times the carapace length), a shorter rostrum, and thin long lateral spines. The antenna has a spinous processes and the exopod is prolonged distally into a spine. The telson lacks a central lobe and the furcae have no dorsal or lateral spines.

The specimen described here is, therefore, tentatively identified as *Afropinnotheres monodi*, which is previously recorded only from the coasts of Morocco and Mauritania.

MARQUES & POHLE (1995) have reviewed descriptions of pinnotherid larvae and the characteristics of the specimen are compared with the types that they have described.

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No. 9

NOTES ON TWO MADEIRA PLANTS

By N. C. H. KRAUSS ¹

The composite plant «Abundância» (*Eupatorium adenophorum* Spreng.) has been known in Madeira for many years. On July 24, 1962 I collected a second species of *Eupatorium*, *E. riparium* Schultz-Bip., confirmed by the Royal Botanic Garden, Kew, England. This was growing in association with *E. adenophorum* in a damp area along a path near Monte. Both these species of *Eupatorium* are native to Mexico. I have seen *E. riparium* growing along a small stream in a ravine at the Desierto de los Leones, Distrito Federal, in the hills above Mexico City. Both species are pests in grazing land in Hawaii.

On November 7, 1960 I collected specimens of *Ulex minor* Roth (determined by Royal Botanic Garden, Kew) in the grassy hills above Ribeiro Frio. Since then I have seen it also at Encumeada and Santo da Serra. *Ulex europaeus* L. has been known in Madeira for a long time, but I have not seen any records of *U. minor*.

1) Entomologist, Hawaii State Department of Agriculture, Honolulu 14, Hawaii, U. S. A.